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DNA & CODIS

ILLINOIS DOCUMENTS

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Deoxyribonucleic
Acid
COMbined
DNA
Index
System



Illinois State Police

What Is DNA?

DNA, or **D**eoxyribo**N**ucleic **A**cid, is the genetic material located within the cells of all living organisms and specifies each person's individual genetic code. Certain portions of DNA are highly variable from one person to another, with the exception of identical twins. These differences are used to associate or eliminate individuals as being the source of body fluid evidence often found in investigations of violent crimes. DNA has the ability to identify a person from a drop of blood the size of a pin head.

DNA can be found practically anywhere on or in the human body. It is contained in blood, semen, saliva, skin cells, tissue, organs, muscle, bone, teeth, hair, urine, fingernails, sweat, feces, and mucus to name just a few! Furthermore, a person's DNA is the same in every cell – the DNA in a man's blood will be the same as the DNA in his saliva.

DNA analysis is conducted in seven of the Illinois State Police (ISP) Forensic Science Laboratories, although all eight operational laboratories receive evidence for possible DNA testing. Physical evidence received in criminal cases by the ISP laboratories is first analyzed for the presence of biological material such as blood or semen. Once a biological material is identified, the material is then analyzed in DNA. The DNA results are compared to the DNA profile of the victim and any potential suspects. If the suspect is eliminated or there is no suspect, the DNA results from the biological material are entered into CODIS.

What Is CODIS?

The **C**ombined **D**N*A* **I**ndex **S**ystem (CODIS), overseen by the FBI and implemented by the ISP at the state level, blends forensic science and computer technology into an effective tool for

**The year 2003 marked the
50-year anniversary of the
discovery of DNA.**

solving crimes. CODIS began as a pilot project in 1990 serving 14 state and local laboratories. ISP participated in that pilot project and began using CODIS routinely in 1993. The FBI's National DNA Index System (NDIS), which became fully operational in 1998, enables states participating in the CODIS program to exchange and compare DNA profiles on a national level.

Indexes

CODIS solves crimes and generates investigative leads by searching several indexes:

- The **Forensic Index** contains DNA profiles from crime scene evidence.
- The **Offender Index** contains DNA profiles of individuals convicted of felonies.
- The **Missing Person Index** contains DNA records from individuals that have been reported missing.
- The **Relatives of Missing Person Index** consists of DNA records from the biological relatives of individuals reported missing.
- The **Unidentified Human (Remains) Index** contains DNA records from recovered living persons (e.g., children who cannot and others who cannot or will not identify themselves), and recovered dead persons (including body parts and tissues) whose identities are not known.

The Illinois State Police has the 3rd largest system of forensic science laboratories in the world – only the FBI and the United Kingdom's Forensic Science Service are larger.

An effective convicted offender database – coupled with thorough DNA casework – not only **solves** crimes and **prevents** future crimes, but also **protects** innocent people who may be implicated, investigated, and possibly wrongfully convicted.

Matches

Through CODIS, ISP Forensic Science Laboratories exchange and compare DNA profiles electronically, in

both the Illinois file and in the national file. This exchange of DNA data and subsequent search of the different indexes often result in a match or “hit,” either between cases or between a case and an offender. CODIS searches have detected numerous “cold hits” – positive leads in criminal cases where no suspects or links between cases have been previously established.

Statistics

	Illinois	U.S.
Offender Profiles	284,669	5,287,505
Forensic Samples	15,962	203,401
CODIS Laboratories	9	183
Offender Hits	4,457	49,813
Forensic Hits	1,060	11,750
Investigations Aided	6,253	62,059
<i>as of December 31, 2007</i>		

Forensic Hits - Matches made among profiles in the Forensic Index can link crime scenes together, possibly identifying serial offenders. Based on a match, police in multiple jurisdictions can coordinate their respective investigations and share the leads they developed independently.

Offender Hits - Matches made between the Forensic and Offender Indexes provide investigators with the identity of the one(s) who left that particular sample.

Investigations Aided - Match information assists case investigators by providing new leads.

After CODIS identifies a potential match, qualified DNA analysts in the casework laboratories confirm the match.

CODIS and the Law

In 1989, Illinois enacted a law requiring persons convicted of a sexual offense to submit samples for DNA analysis. The DNA Indexing Section was established in the Springfield Forensic Science Laboratory to analyze the samples collected under this mandate and to place the results into a database. In 2002, another law was enacted

requiring all felons to submit blood, saliva, or tissue specimens. What began as a stream of 2,000 samples per year has grown to over 100,000 samples. Rules in the Illinois Administrative Code detail collection guidelines, privacy issues, and circumstances where a person's records may be expunged.

Success Stories

April 1993 – A routine DNA database search in the Springfield Laboratory connected a 42-year-old man already imprisoned for a 1992 sexual assault, to the November 1991 murder of a man and the sexual assault of his wife. The DNA profile taken from semen left at the couple's home in northern Illinois - where the offender had lived less than a mile away - matched the profile taken from the offender's blood sample drawn at the time of his sentencing for the unrelated crime. The offender was subsequently sentenced to life in prison.

December 1997 – The first test search of the National DNA Index System (NDIS) occurred in Illinois on December 1. Within hours, the first match was generated between the Illinois State Police's database of convicted sexual offenders and Minnesota's system. The prisoner, who was already arrested in 1996 and convicted of two sexual assaults in downstate Illinois, was tied to an attempted murder and rape in 1989 in Wisconsin. He is now serving a 40-year prison sentence.

August 1999 – A central Illinois man was arrested for the November 1998 rape of a Springfield real estate agent he lured to a vacant house. After DNA analysis and database searching, an Illinois State Police forensic scientist was able to conclude that DNA from semen stains found at the scene of a separate rape/homicide case matched the blood sample taken from the man at the time of his arrest for the November rape. He was sentenced to life in prison.

CODIS is implemented and authorized by Section 5-4-3 of the Unified Code of Corrections (730 ILCS 5/5-4-3) and operated by rules listed in Title 20, Section 1285 of the Administrative Code (20 ILAC 1285).

1. Rockford Forensic Science Laboratory
200 South Wyman, Suite 400
Rockford, IL 61101
815/987-7419

1

2. Forensic Science Center at Chicago
1941 West Roosevelt
Chicago, IL 60608
312/433-8000

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4

3. Westchester Forensic Science Laboratory
10001 West Roosevelt Road
Westchester, IL 60154
708/338-7800

5

4. Joliet Forensic Science Laboratory
515 East Woodruff Road
Joliet, IL 60432
815/740-3543

6, 7

5. Morton Forensic Science Laboratory
1810 South Main Street
Morton, IL 61550
309/284-6500

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6. Springfield Forensic Science Laboratory
2040 Hill Meadows Drive
Springfield, IL 62702
217/782-4975

7. Research and Development Laboratory
2060 Hill Meadows Drive
Springfield, IL 62702
217/557-2399

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8. Metro-East Forensic Science Laboratory
10023 Bunkum Road
Fairview Heights, IL 62208
618/394-6000

9. Southern Illinois Forensic Science Centre
606 East College Street
Carbondale, IL 62901
618/529-6500

